

CECIDOMYIINAE (GALL MIDGES)*

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(With 4 Text-figures.)

THE collection of Cecidomyiinae formed by Messrs. Buxton and Hopkins contained very few specimens, mostly in bad condition; some were stuck on cardboard and others on pin points; with gall midges such treatment greatly reduces the value of material. The best method of preservation is to keep the insects in 70 per cent. alcohol containing a drop or two of pure glycerine. This maintains the specimens in good condition until it is necessary to make microscope slides of them. The present examples are apparently the first Cecidomyiidae to be collected in the Samoan Islands, and, owing to the paucity of the collection, no attempt has been made to draw any inference as to geographical affinities. A few, selected as having outstanding characters and so likely to be easily recognised again, are described below.

1. *Lestodiplosis*, sp.

In the case of one species there were several males and one female. These were labelled "bred from fowl dung, 6.ii.1925, Apia, Upolu," and belong to the cosmopolitan genus *Lestodiplosis*, but owing to their condition it is not considered advisable to describe them. The wings are transparent, 3rd vein extending approximately to tip of wing; palpi of four segments, the segments of about equal length. No other species of this genus is known to breed in fowl dung.

Allobremia, gen. nov.

Flagellar segments similar to those of *Bremia* Rond., *Homobremia* Kieff., *Heterobremia* Felt., and *Lepidobremia* Kieff.; legs clothed with scales as in *Lepidobremia* Kieff.; genitalia resembling those of *Heterobremia* Felt.; but distinguished from all the genera above mentioned by having the claws on the

* Two other Cecidomyiidae, belonging to the subfamily Lestremiinae, are discussed by Edwards, pp. 39-40 of this fascicle.

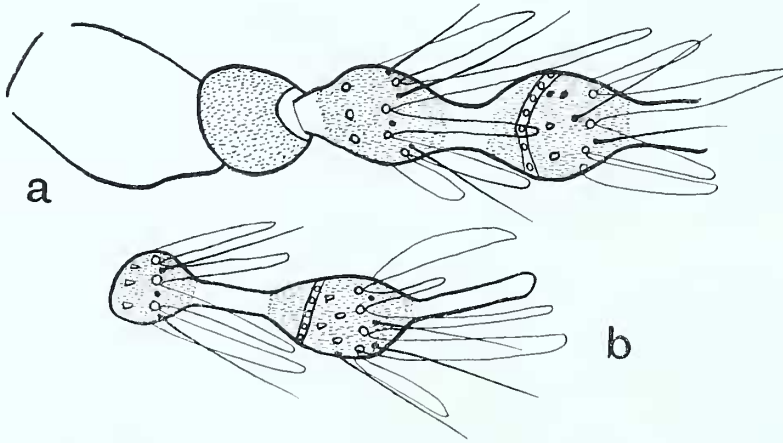
middle and hind legs simple and bent at right angles. Following Kieffer's grouping (*Genera Insectorum*, fasc. 152, 1913) of the *Bremia* (sens. lat.) complex, it is considered that this genus is very close to *Heterobremia* Felt, but owing to differences in genitalia and claws it is desirable to treat it as distinct.

Genotype: *A. upolui*, sp. n.

2. *Allobremia upolui*, sp. n.

Text-figs. 1, 2.

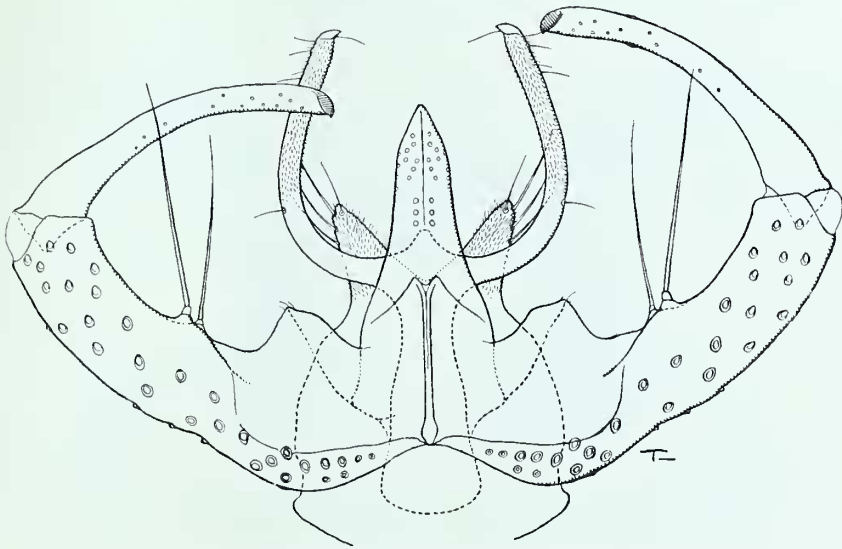
♂. Length about 2 mm. *Antennae* 2+12 segmented; 1st segment elongate, 2nd subglobular; 1st and 2nd flagellar segments fused; each flagellar segment with basal globular enlargement connected by a short stem to distal enlargement, which bears a long neck, except 12th flagellar segment, which



TEXT-FIG. 1.—*Allobremia upolui*, gen. et sp. n. (a) Base of antenna; (b) penultimate antennal segment.

bears an elongate finger-like process on distal enlargement; basal enlargement with a basal ring of stout setae, irregular setae and a whorl of circumfila with loops of irregular lengths, some being very long; stem of 1st flagellar segment (Text-fig. 1a) only slightly longer than broad, stem of penultimate segment (Text-fig. 1b) 3-3½ times as long as broad; intermediate stems gradually increasing in length; distal enlargement with a basal ring of applied circumfila, irregularly placed stout setae distally to ring of applied circumfila, and a distal ring of circumfila with loops of irregular lengths; neck of

1st flagellar segment nearly twice as long as broad, neck of penultimate segment about 6-7 times as long as broad and nearly as long as distal enlargement. *Palpi*: 4 segments, basal segment irregularly quadrate, slightly longer than broad, second elongate, about $2\frac{1}{2}$ times as long as broad, third about the same as second, distal nearly 3 times as long as broad, terminal three segments each with a few setae. *Thorax* and general body colour brown. *Wings*: costa hairy, area between costa and subcosta more or less distinctly chitinised, 3rd vein with slight cross-vein to subcosta at about basal third of subcosta, 3rd vein interrupting costa beyond tip of wing. *Legs*: long, covered with scales and hairs;



TEXT-FIG. 2.—Genitalia of *Allobremia upolui*, gen. et sp. n.

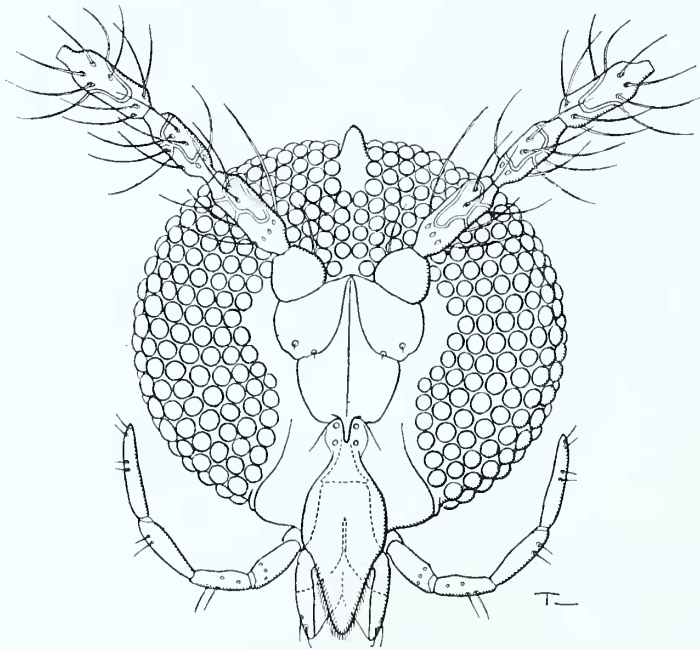
claws simple on 4 posterior legs at least, bent at right angles; empodium distinctly shorter than claws. Genitalia (Text-fig. 2): basal clasp segment long, narrow, with very long stout setae and basal lobe at internal angle; distal clasp segment long, moderately curved; dorsal plate bilobed, each lobe roundly triangular with short setae distally, ventral plate with two long curved setose linear processes extending well beyond distal extremities of basal clasp segments, giving appearance of a fork with curved prongs; penis elongate, triangular, with setae.

Upolu: Malololelei, 2,000 ft., type, 20.vi.1924. Savaii: Salailua, 2 paratypes, 20.v.1924; Safune, 1 paratype, rain forest 2,000-4,000 ft., 8.v.1924 (Bryan).

3. *Liebeliola bifurcata*, sp. n.

Text-fig. 3.

♀. Length about $2\frac{1}{2}$ mm. *Antennae* 2+12 segmented; 1st and 2nd flagellar segments fused, flagellar segments cylindrical with short necks, each bearing basal ring of long stout setae, two rings of applied circumfila connected by a longitudinal thread and irregular distal whorl of long setae; necks almost transverse, only slightly longer than broad; distal flagellar segment with stout setose appendage. Labium (Text-fig. 3) prominent, about one-third length of

TEXT-FIG. 3.—Head of *Liebeliola bifurcata*, sp. n.

head. *Palpi*: 4 segments, basal segment about $2\frac{1}{2}$ times as long as broad, second about 3 times as long as broad, third about 4 times as long as broad, fourth segment about 5 times as long as broad and distinctly longer than third, all with a few setae. *Thorax* very dark brown. *Wings*: very dark brown veins, mediastinal vein reaching to cross-vein, which is almost at right angles to subcosta, 3rd vein slightly curved, reaching just beyond tip of wing, 5th vein forked, upper branch continuing direction of stem. *Legs*: dark brown, covered with hairs and scales; claws bent at right angles, 4 anterior simple, one claw of

each hind leg split distally into two equal teeth; empodium small. *Abdomen* dark brown, hairy. Ovipositor lamelliform, lateral lamellae rectangular, with long setae, ventral lamella well developed, roundly triangular.

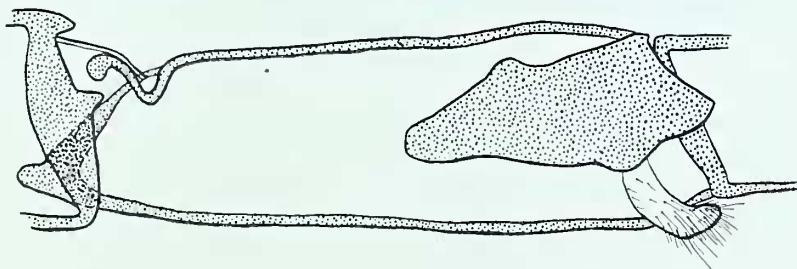
Upolu: Malololelei, type, xii.1925.

This species is placed provisionally in *Liebeliola*, in spite of several differences. The genera of this group (*Chaetodiplosis* Kieff., *Liebeliola* Kieff. and Jorg., and *Tetradiplosis* Kieff. and Jorg.) are known to be represented in Argentina and tropical Africa: *Liebeliola* and *Tetradiplosis* are monotypic.

4. *Phaenepidosis auriculata*, sp. n.

Text-fig. 4.

♀. Length 3 mm. *Antennae* 2+11 segmented; 2 basal segments globular, 1st and 2nd flagellar segments not fused, each flagellar segment elongate, cylindrical, with distal neck, bearing basal ring of long stout setae about as long as cylindrical portion, two irregular whorls (median and distal) of very long fine setae, longer than cylindrical portion, and two rings of loosely applied



TEXT-FIG. 4.—Proximal tarsal segment of *Phaenepidosis auriculata*, sp. n., showing distal hair-bearing appendage.

circumfila joined by a longitudinal thread; distal segment without neck; cylindrical portion of 1st flagellar segment about 5 times as long as broad and about 4 times as long as neck, which is about twice as long as broad; that of 2nd about 3 times as long as broad and about twice as long as neck, which is about $2\frac{1}{2}$ times as long as broad; that of 3rd about $2\frac{1}{2}$ times as long as broad and about twice as long as neck, which is about $2\frac{1}{2}$ times as long as broad; that of 9th about $2\frac{1}{2}$ times as long as broad and about twice as long as neck; that of 10th about 3 times as long as broad, and neck about $2\frac{1}{2}$ times as long as broad; 11th (distal) segment about 3 times as long as broad. *Palpi* long, 4 segmented.

2nd segment about 6 times as long as broad, 3rd about 7 times as long as broad, 4th about 10 times as long as broad. *Thorax* brown. *Wings* as in *Dicroneurus* Kieffer. *Legs*: hairy, long; proportion of tarsal segments of hind legs 1:11:6:3½:1½; proximal tarsal segment, on each leg, with small band-like appendage covered with short hairs situated at distal end of segment (Text-fig. 4); elaws simple, swollen at tips; empodium as long as elaws. *Ovipositor* non-extensile, lamelliform, having short lamellae with long setae.

Upolu: Malololelei, 2,000 ft., type, 21.vi.1924.

The genus *Phaenepidosis* includes three described species, two found in East Africa and one in U.S.A. The new species is distinguished by the curious tarsal appendage, which may be sensory.

LIST OF TEXT-FIGURES.

- Text-fig. 1. *Allobremia upolui*, gen. et sp. n. (a) Base of antenna; (b) penultimate antennal segment.
,, 2. Genitalia of *Allobremia upolui*, gen. et sp. n.
,, 3. Head of *Liebeliola bifurcata*, sp. n.
,, 4. Proximal tarsal segment of *Phaenepidosis auriculata*, sp. n., showing distal hair-bearing appendage.